CLAIMS:

1. A porous film-forming composition comprising

(A) 100 parts by weight of a curable silicone resin having a number average molecular weight of at least 100,

(B) 5 to 50 parts by weight of a micelle-forming surfactant, and

(C) 0.01 to 10 parts by weight of a compound which generates an acid upon pyrolysis.

2. The composition of claim 1 wherein the curable silicone resin (A) comprises at least 10 mol% of structural units derived by hydrolytic condensation of a silane having the general formula (1):

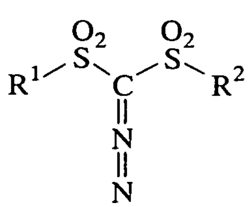
$$SiZ_4 \qquad (1)$$

wherein Z is a hydrolyzable group or a partial hydrolytic condensate thereof.

3. The composition of claim 1 wherein the compound (C) generates an acid upon pyrolysis at a pyrolytic temperature which is lower than the decomposition temperature or boiling point of the micelle-forming surfactant (B).

4. The composition of claim 3 wherein the pyrolytic temperature of the compound (C) is up to 150° C.

5. The composition of claim 4 wherein the compound (C) is a diazo compound of the general formula (3) or (4):



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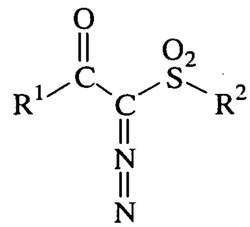
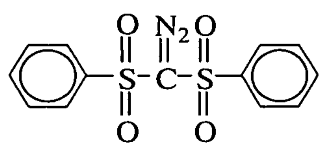


(4)

wherein R^1 and R^2 are each independently a substituted or unsubstituted monovalent hydrocarbon group.

6. The composition of claim 5 wherein the diazo compound is selected from compounds of the formulae (5) to (10).



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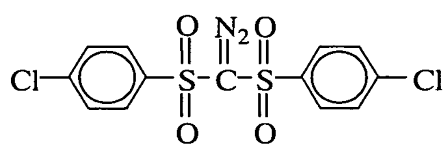

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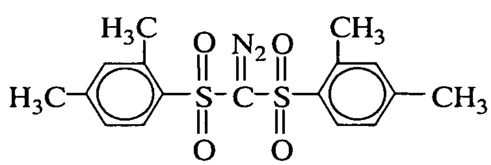

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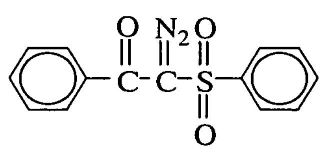

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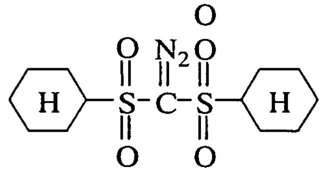

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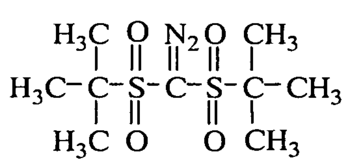


(10)

7. The composition of claim 1, further comprising a solvent.

8. A method of manufacturing a porous film, comprising:

a step of applying the composition of claim 1 to a substrate to form a coating,

a first stage of heat treatment of the coating at a temperature which is lower than the decomposition temperature or boiling point of component (B) and equal to or higher than the pyrolytic temperature of component (C), and

a second stage of heat treatment of the coating at a temperature which is equal to or higher than the decomposition temperature or boiling point of component (B).

9. A porous film obtained using the composition of claim 1.

10. An interlayer dielectric film obtained using the composition of claim 1.

11. A semiconductor device having a porous film incorporated therein, the porous film being obtained using a porous film-forming composition comprising

(A) 100 parts by weight of a curable silicone resin having a number average molecular weight of at least 100,

(B) 5 to 50 parts by weight of a micelle-forming surfactant, and

(C) 0.01 to 10 parts by weight of a compound which generates an acid upon pyrolysis.

12. The semiconductor device of claim 11 wherein the curable silicone resin (A) comprises at least 10 mol% of structural units derived by hydrolytic condensation of a silane having the general formula (1):

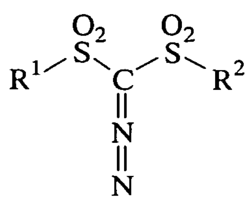
$$SiZ_4 \qquad (1)$$

wherein Z is a hydrolyzable group or a partial hydrolytic condensate thereof.

13. The semiconductor device of claim 11 wherein the compound (C) generates an acid upon pyrolysis at a pyrolytic temperature which is lower than the decomposition temperature or boiling point of the micelle-forming surfactant (B).

14. The semiconductor device of claim 13 wherein the pyrolytic temperature of the compound (C) is up to 150°C.

15. The semiconductor device of claim 14 wherein the compound (C) is a diazo compound of the general formula (3) or (4):



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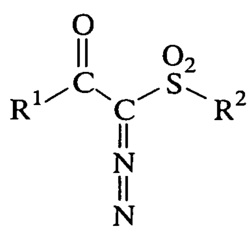
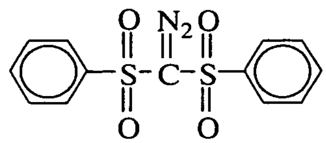


(4)

wherein R^1 and R^2 are each independently a substituted or unsubstituted monovalent hydrocarbon group.

16. The semiconductor device of claim 15 wherein the diazo compound is selected from compounds of the formulae (5) to (10).



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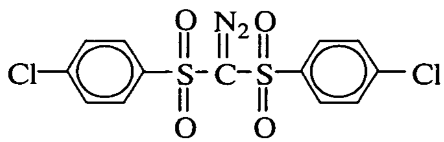

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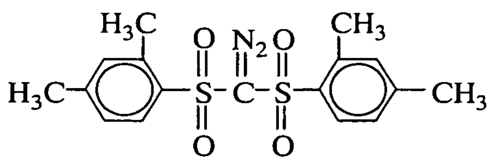

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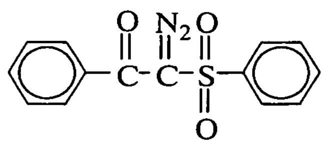

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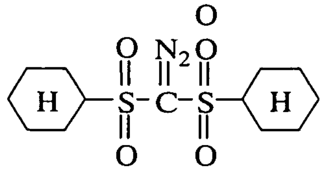

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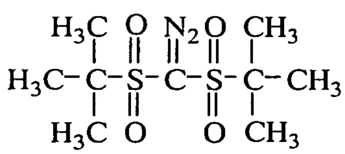

(10)

17. The semiconductor device of claim 11 wherein said composition further comprises a solvent.

18. The semiconductor device of claim 11 wherein the porous film is present as a dielectric film between metal lines in an identical layer in a multilayer interconnect structure or an interlayer dielectric film between upper and lower metal wiring layers.